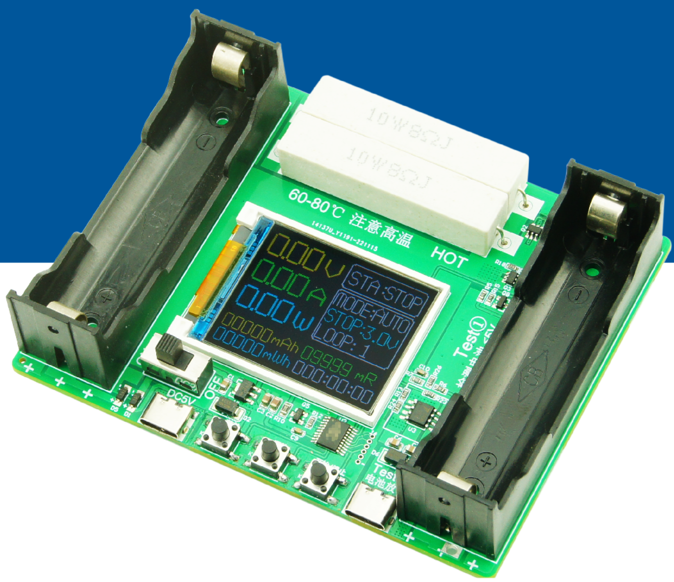
测试文本: ABCDEABC
测试文本: **ABCDEABCDE**

18650

锂电池充电、容量/内阻测量、分容仪参数及教程

会用才能用好

Product support single channel internal resistance, capacity measurement; Support charging, automatic mode supports up to 9 charging and discharging cycles; During the charging and discharging process, some components will produce local high temperature. Please ensure that the use environment is open and not covered. It is better to increase the heat dissipation of the fan. In order to ensure that the battery card clamp firmly, 18650 battery holder uses compact battery holder, suitable for flat head battery measurement!!



中文-Chinese　　**英文-English**

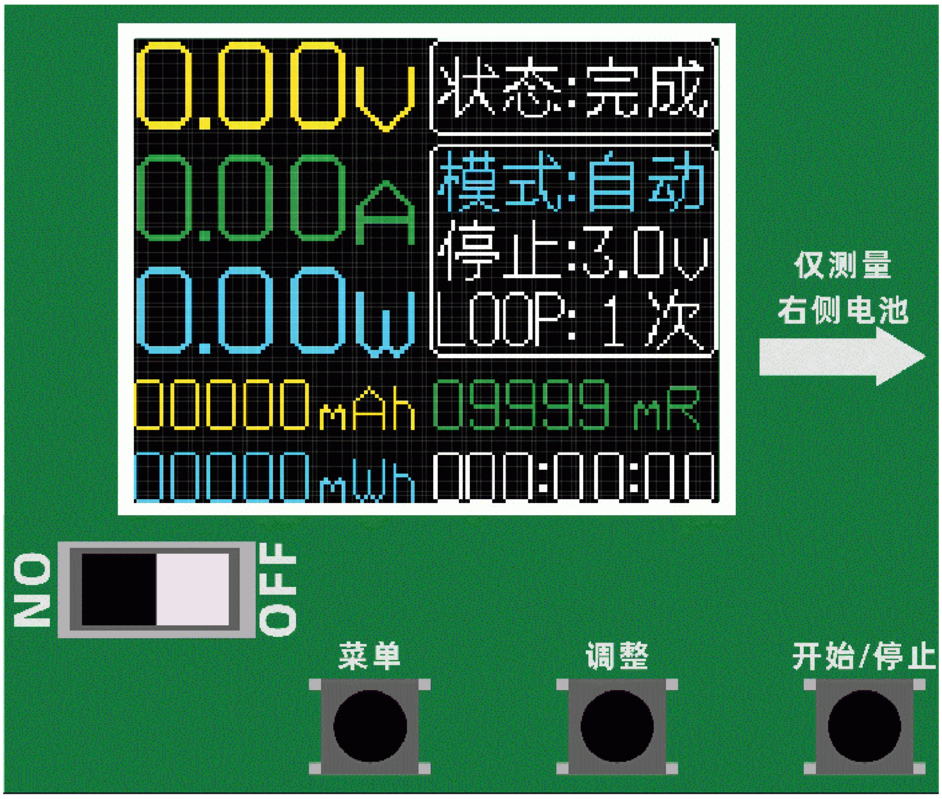
Language switching

① Shutdown

② Press and hold the "菜单" key to start the machine, release the key after the screen lights up, and wait 10 seconds after starting the machine to shut down

③ Reboot to complete the switch.

测试文本: ABCDEABC
测试文本: **ABCDEABCDE**



01

技术参数
Technical parameter

Basic parameters

Power supply: DC5V or 18650 battery (self prepared)

Applicable batteries: batteries that meet the stopping discharge voltage of 2.5~3.5 V and 4.2 V charging are applicable

Power supply interface: Type-C , self provided power supply line

System language: Chinese (default), English

Test quantity: 1 circuit charge and discharge measurement (only the right battery)

Internal resistance measurement: Yes, DC two-wire method is used to measure the internal resistance

Charging function: support, automatic cut-off charging when fully charged

Discharge function: support, automatically stop when conditions are met

Automatic charging and discharging: Yes, the battery is fully charged at the end of automatic mode

测试文本: ABCDEABC
测试文本: **ABCDEABCDE**

Loop charging and discharging: supported, adjustable for 1~9 cycles

Status prompt: Supported

Stop discharge voltage: 2.5V, 2.6V, 2.7V, 2.8V, 2.9V, 3.0V, 3.1V, 3.2V

3.3V, 3.4V and 3.5V are adjustable in 11 gears

Discharge current: two circuits of resistance, the maximum current is about 1A, which

cannot be adjusted and does not support independent transformation

Charging voltage: controlled by special battery charging chip, the maximum charging

voltage is about 1A, and the full charging voltage is 4.2V

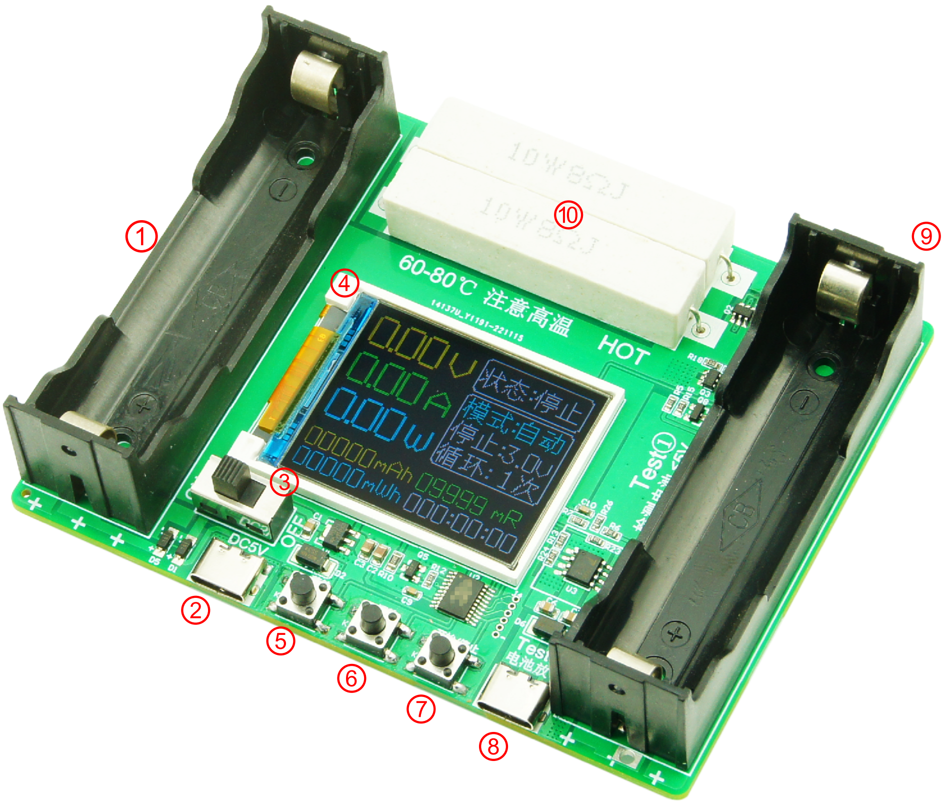
Save in case of power failure: save only the setting parameters, not the metering data

Product weight: g (net weight) g (including package)

Product size: 110 × eighty-eight × 30mm

Package size: 153 × one hundred × 42mm (corrugated box)

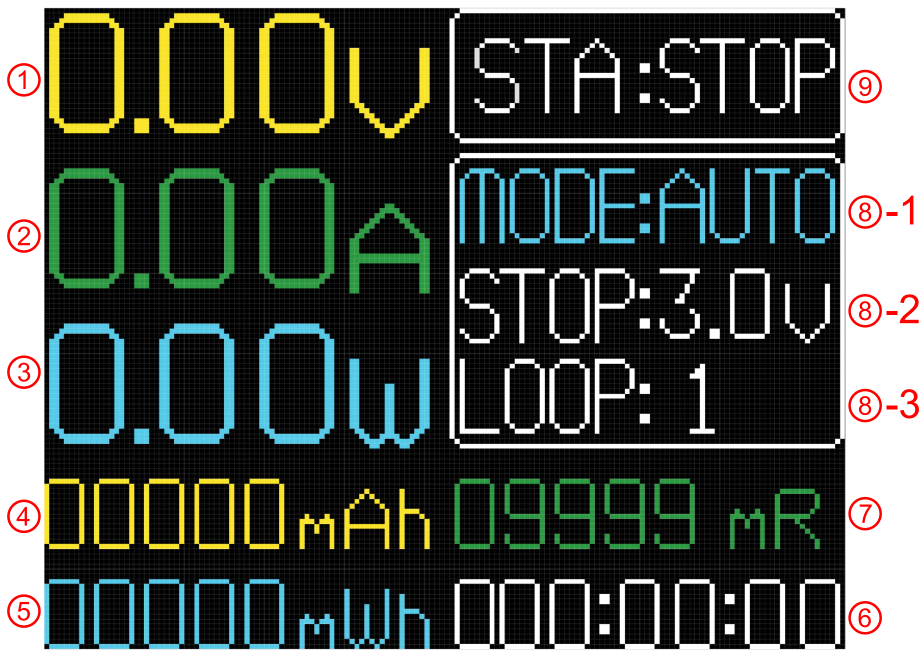
Hardware introduction



测试文本: ABCDEABC
测试文本: **ABCDEABCDE**

① Working battery compartment (neither charging nor discharging)
② Type-C 5V power supply interface
③ON/OFF Toggle switch
④ 1.77 inch display screen
⑤ Menu button
⑥ "Adjust" button
⑦ Start/Stop button
⑧ Test ② Type-C external discharge interface
⑨ Test ① Charge and discharge 18650 battery compartment
⑩ 10W 8 Ω J discharge cement resistance

Interface introduction



① Real time voltage　② Real time current
③ Real time power　④ Cumulative capacity
⑤ Accumulated energy　⑥ Cumulative run time -hhh: mm: ss
⑦ Internal resistance of battery
⑧ - 1: Working mode menu　⑧ - 2: Stop voltage menu
⑧ - 3: Cycle times menu　⑨ Status indication

Comparison of internal resistance test accuracy

The product uses the DC 2-wire method to test the internal resistance of the battery. When the battery is fully charged, the numerical accuracy is high. The test results are used for reference and comparison between the batteries tested in the same batch. For those with high internal resistance accuracy requirements, please use a professional internal resistance instrument using the 4-wire AC method to test.

Test principle

测试文本: ABCDEABC
测试文本: **ABCDEABCDE**

The DC impedance is that according to the physical formula R=V/I, the test equipment forces the battery to pass a large constant DC current (usually a large current of 10A-80A is used at present) in a short time (usually 2-3 seconds), measures the voltage at both ends of the battery at this time, and calculates the current internal resistance of the battery according to the formula.

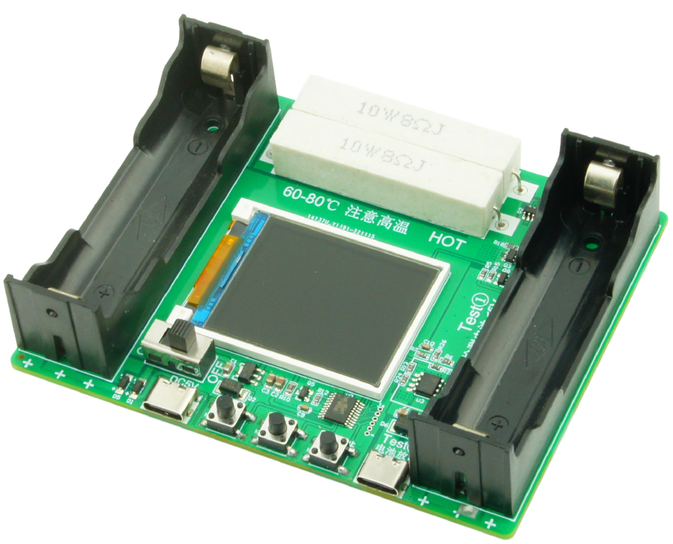
测量电压（V）	本品（毫欧）	某四线制内阻测量仪（毫欧）
3.7	18	16
4.0	62	62
4.18	58	70
4.16	22	17
3.77	68	57
3.47	95	80
3.99	80	77
3.69	79	69
4.05	90	104
3.85	96	119

Capacity test accuracy reference

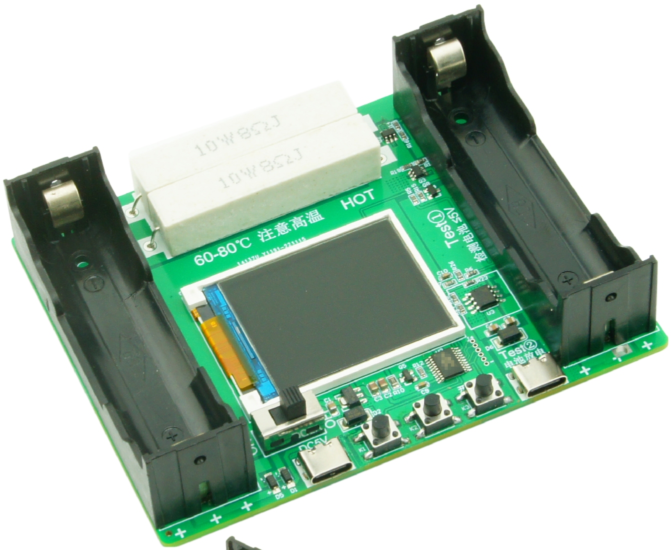
The test results of five LGABB4 18650 batteries (with a nominal capacity of 2600mAh) in AUTO mode are as follows

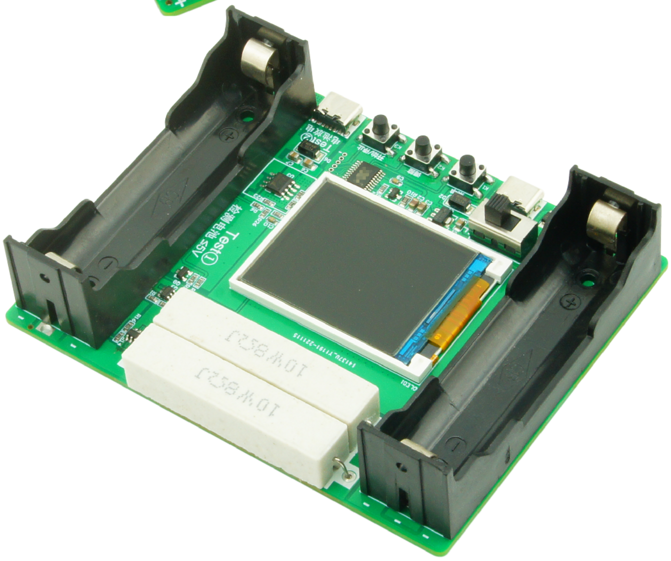
电池序号	电池内阻（毫欧）	电池容量（mAh）
1	61	2650
2	56	2602
3	50	2609
4	63	2616
5	53	2643

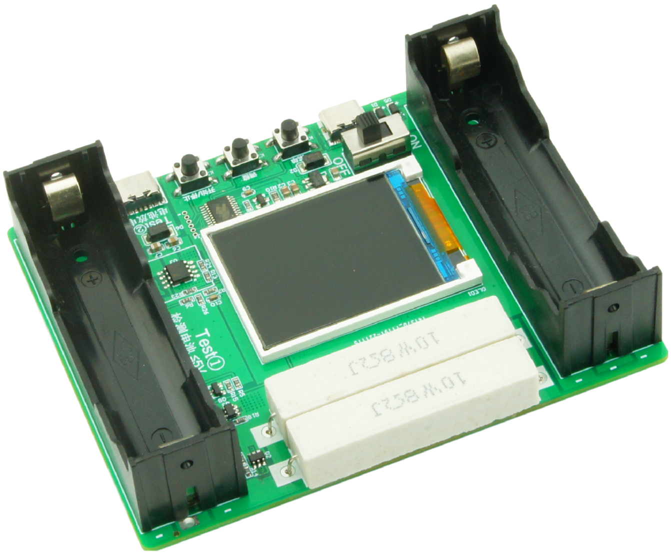
Product show



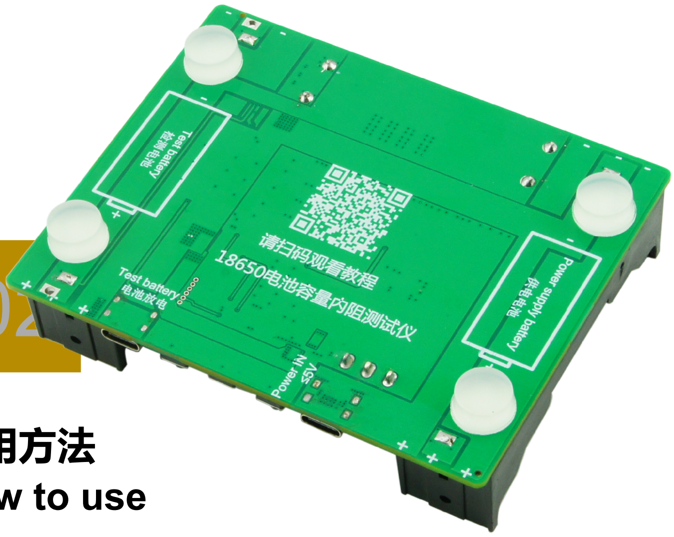
测试文本: ABCDEABC
测试文本: **ABCDEABCDE**







测试文本: ABCDEABC
测试文本: **ABCDEABCDE**



02

使用方法
How to use

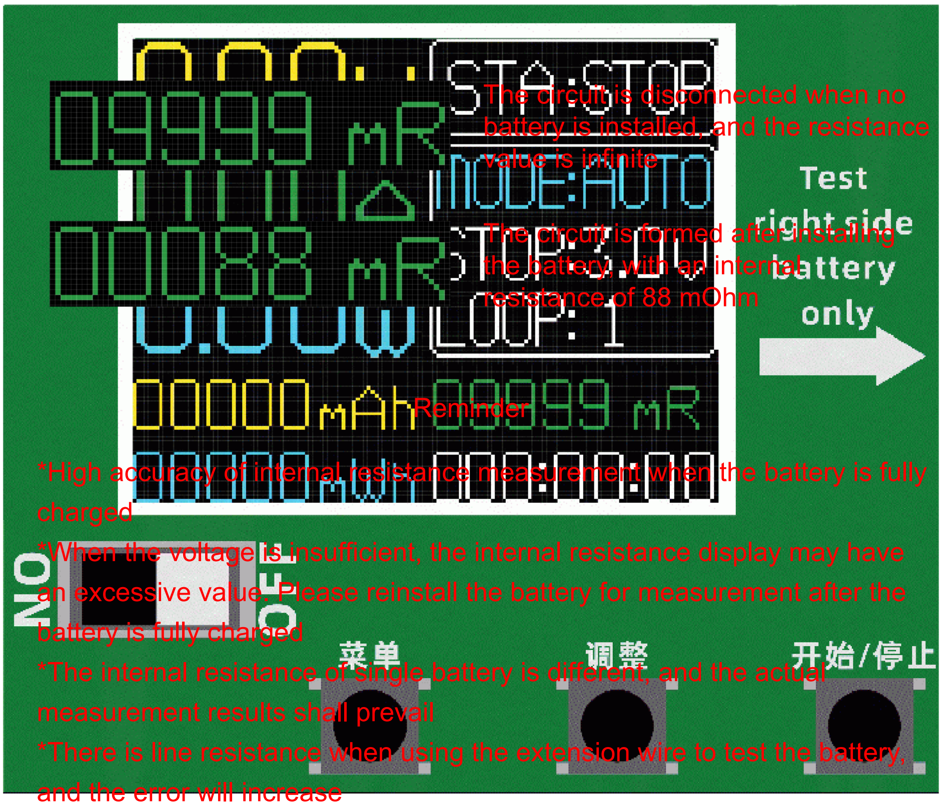
1、 Measuring internal resistance

The product uses the DC 2-wire method to test the internal resistance of the battery. When the battery is fully charged, the numerical accuracy is high. The test results are used for reference and comparison between the batteries tested in the same batch. For those with high internal resistance accuracy requirements, please use a professional internal resistance instrument using the 4-wire method to test.

Test method

Wait a few seconds after installing the battery, read the battery data, and the battery voltage and internal resistance parameters will be displayed. There will be a delay in data loading during battery loading and unloading, and the data will be checked after it is stable.

测试文本: ABCDEABC
测试文本: **ABCDEABCDE**



The circuit is disconnected when no battery is installed, and the resistance value is infinite

The circuit is formed after installing the battery, with an internal resistance of 88 mOhm

Reminder

*High accuracy of internal resistance measurement when the battery is fully charged

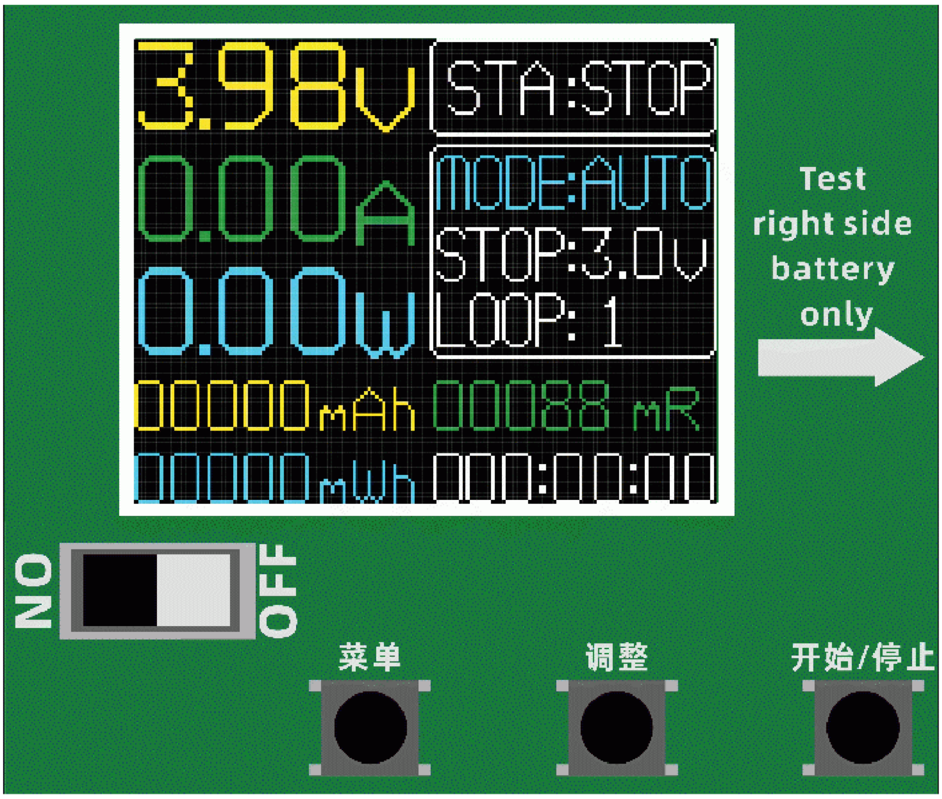
*When the voltage is insufficient, the internal resistance display may have an excessive value. Please reinstall the battery for measurement after the battery is fully charged

*The internal resistance of single battery is different, and the actual measurement results shall prevail

*There is line resistance when using the extension wire to test the battery, and the error will increase

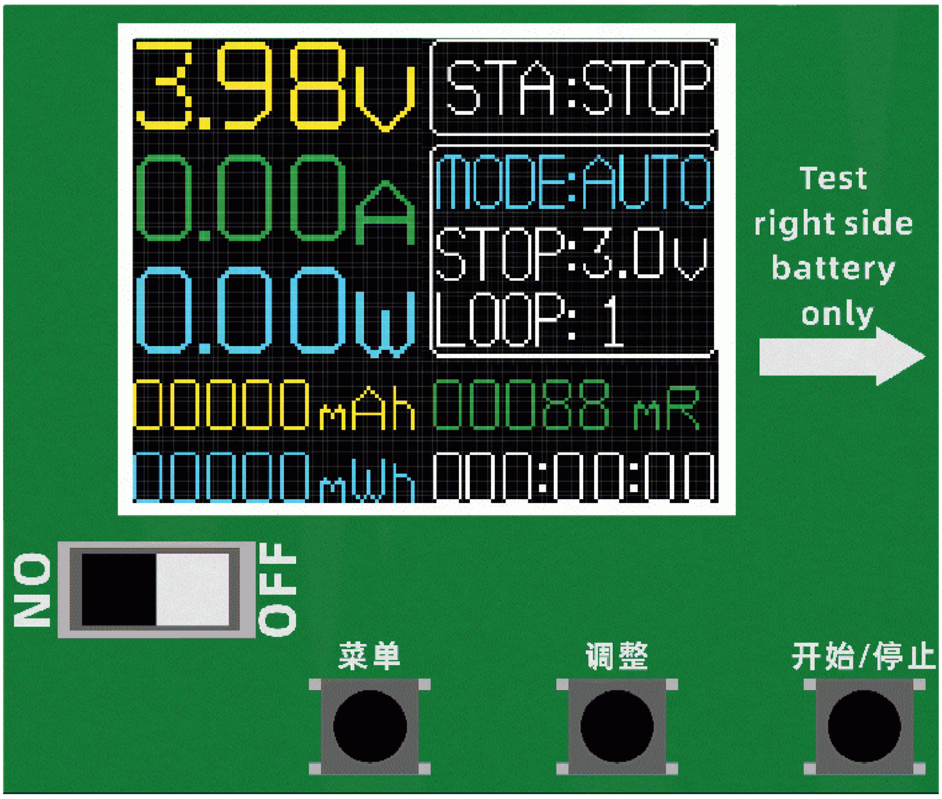
2. Setting method

2.1 Click "菜单" to switch menu options

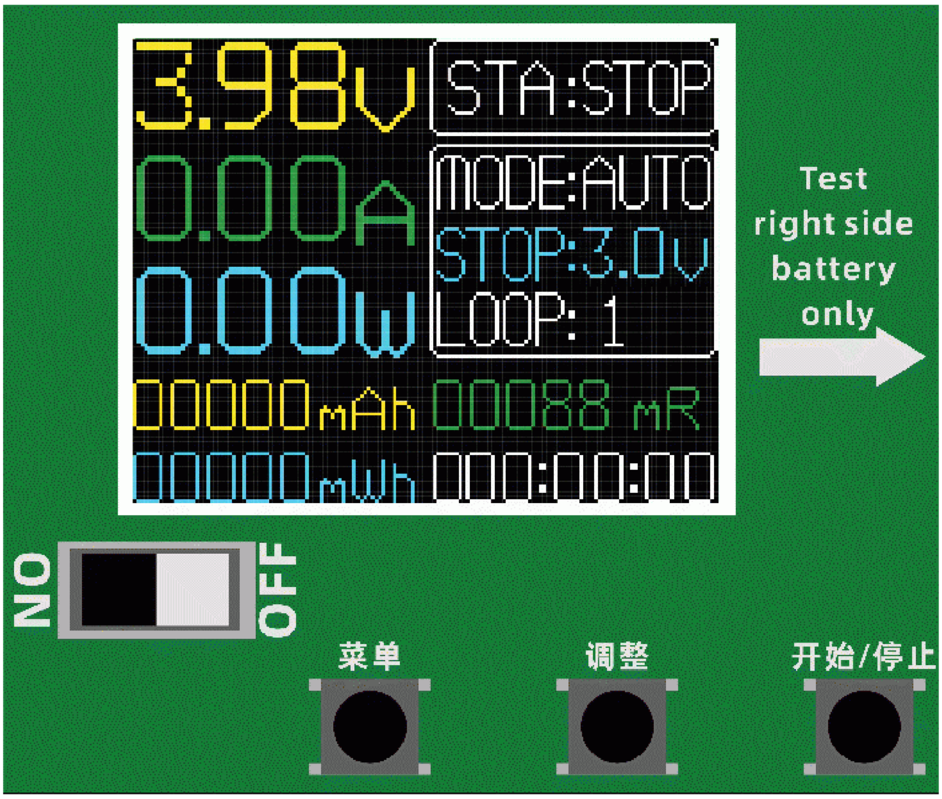


2.2 Mode menu: click the "调整" button to switch the mode

测试文本: ABCDEABC
测试文本: **ABCDEABCDE**

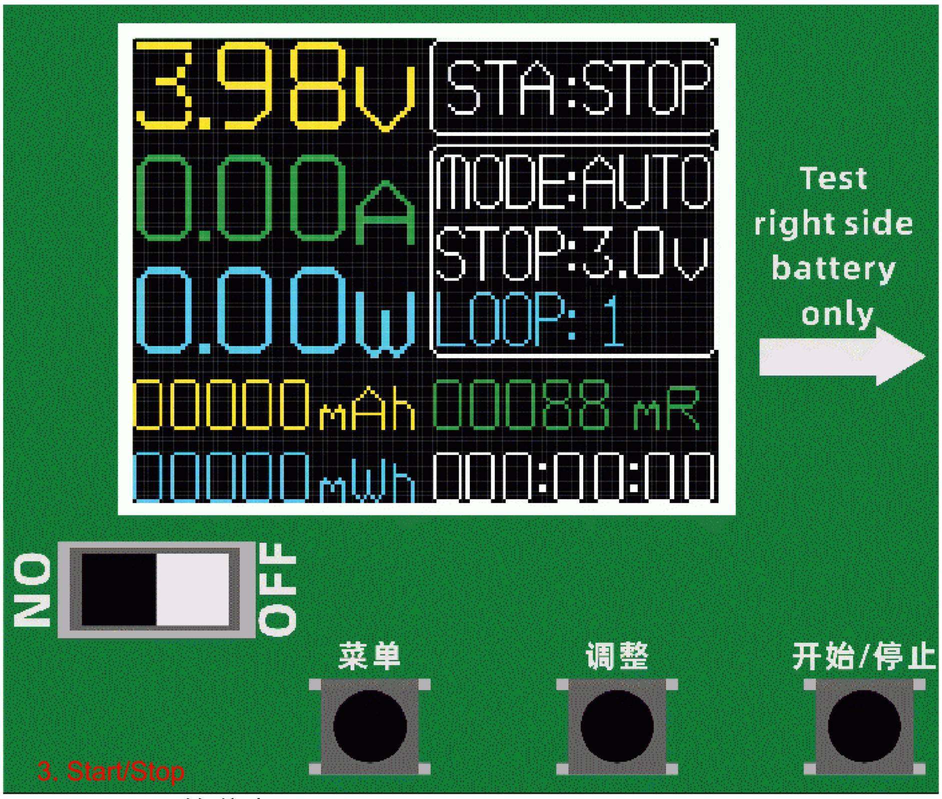


2.3. Stop discharge voltage: click "调整" to switch the stop discharge voltage. The adjustment range is 2.5V~3.5V. The stop voltage is invalid for "CHG-charging mode".



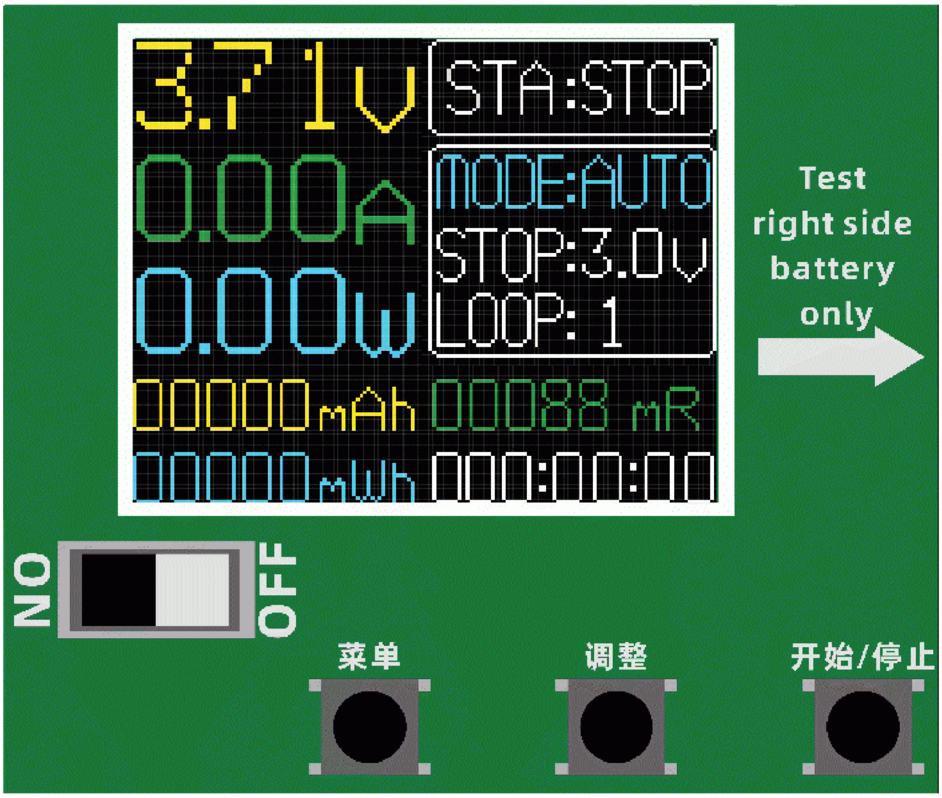
2.4 Loop times: click "调整" to set the cycle times. The cycle is only valid in "Auto". The cycle times are invalid in "CHG" and "DSG"

测试文本: ABCDEABC
测试文本: **ABCDEABCDE**

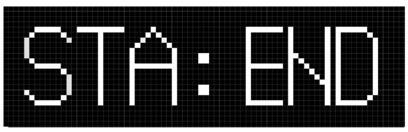


3. Start/Stop

Click the "开始/停止" button to start the cargo suspension program



The program will display "STA:END" after running



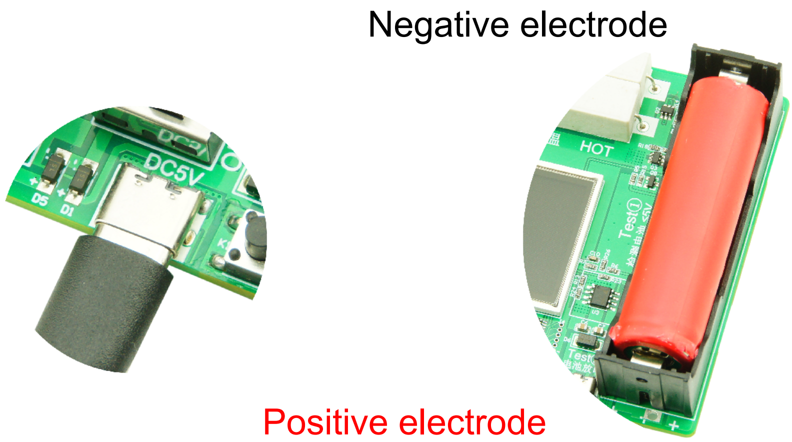
"STA:END"It only means that the program has finished running. If the current link conditions cannot be met during the program running, the program will skip to the next link until it is completed, and the program will stop running!

测试文本: ABCDEABC
测试文本: **ABCDEABCDE**

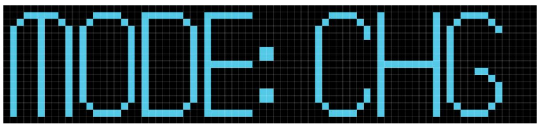
4. Charge

During charging, the charging chip and battery will generate heat, and there is high temperature in some parts. Pay attention to heat dissipation!!!

4.1 Connect to DC5V power supply. The charging mode must be connected to external 5V power supply. Only the right battery is charged

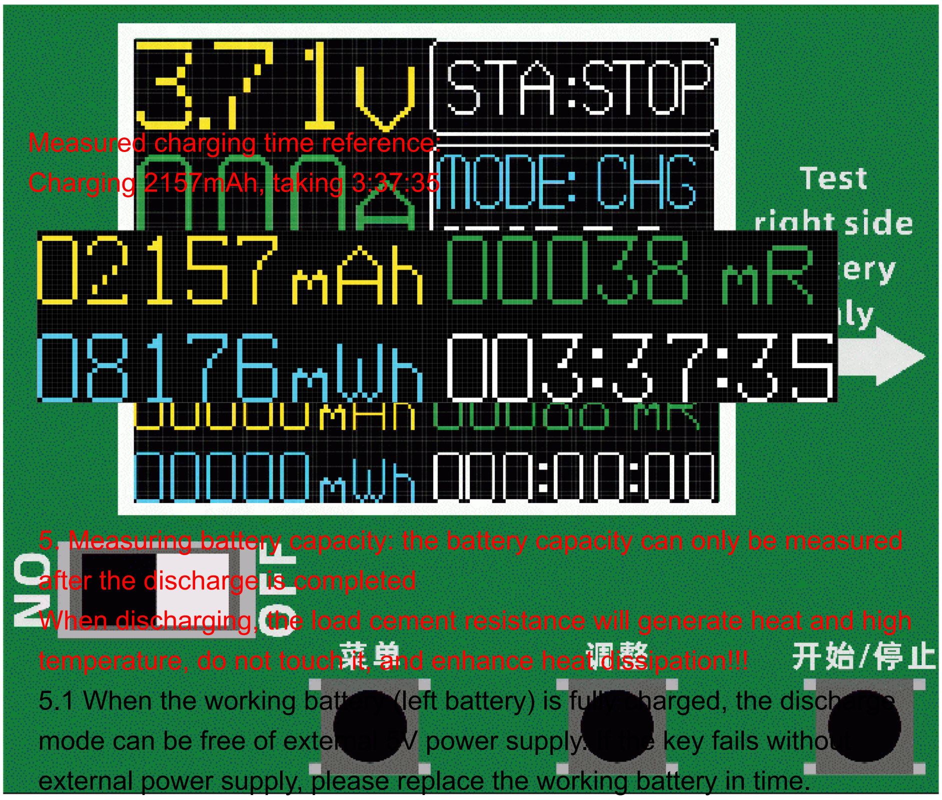


4.2. Adjustment mode:CHG, filling the battery to the right holder



4.3、Click "开始/停止" to run the program. The program starts. The indication status is charging. Only the time is recorded in the charging process, and capacity and energy are not measured. After charging, the program stops running. The indication status is "STA:END".

测试文本: ABCDEABC
测试文本: **ABCDEABCDE**

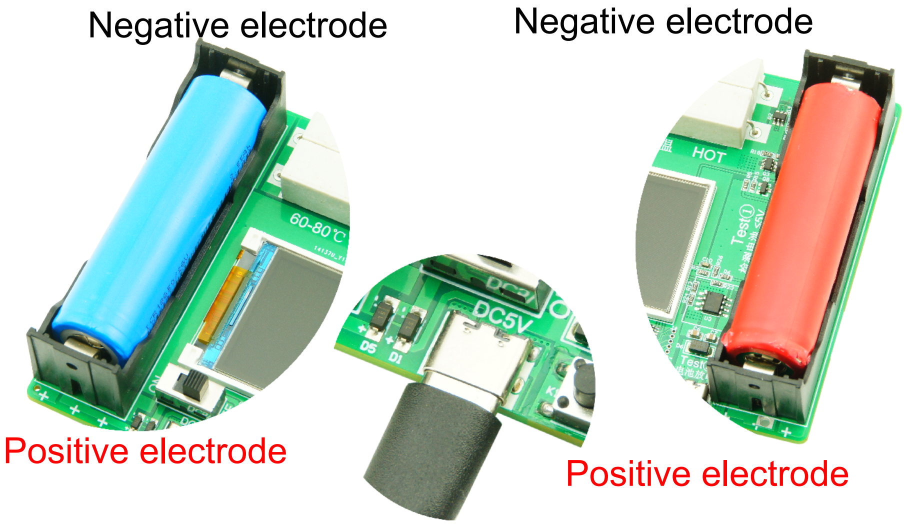


Measured charging time reference:
Charging 2157mAh, taking 3:37:35

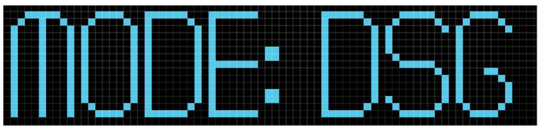
5. Measuring battery capacity: the battery capacity can only be measured after the discharge is completed

When discharging, the load cement resistance will generate heat and high temperature, do not touch it, and enhance heat dissipation!!!

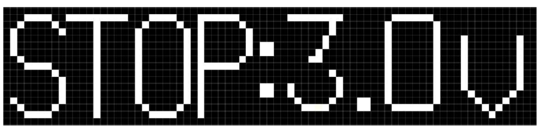
5.1 When the working battery (left battery) is fully charged, the discharge mode can be free of external 5V power supply, if the key fails without external power supply, please replace the working battery in time.



5.2. Adjustment mode: DSG, fill the battery to the right holder



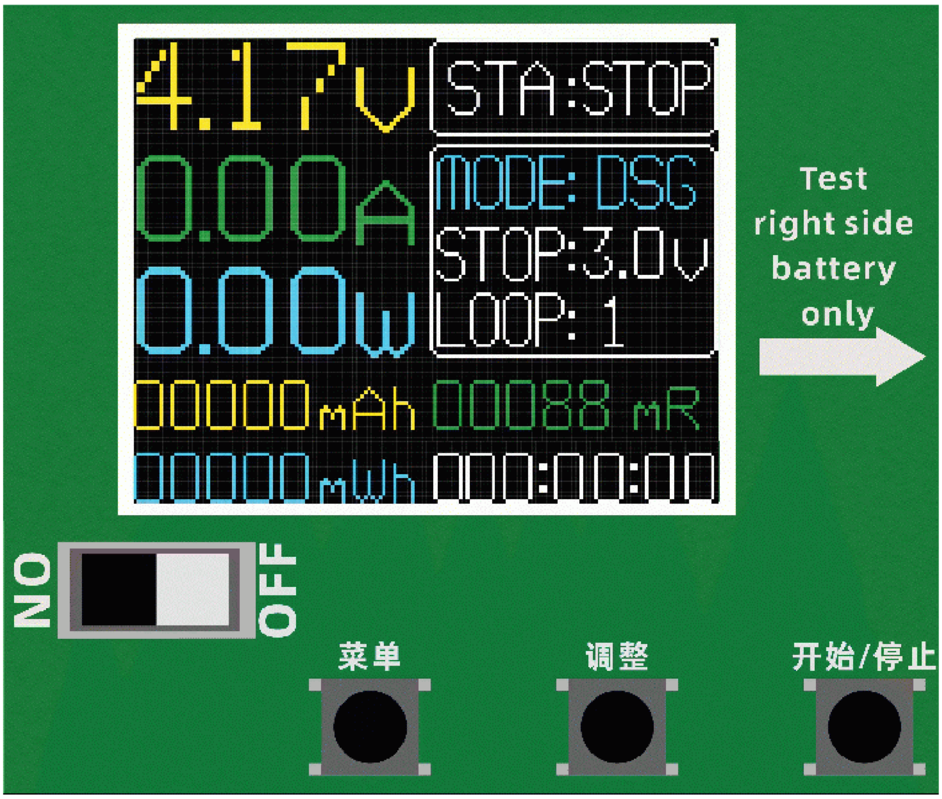
5.3 Setting the stop discharge voltage



5.4 Click "开始/停止" to run the program. The program starts, indicating the status: discharge. The discharge process records the time, capacity

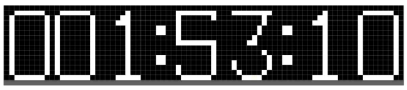
测试文本: ABCDEABC
测试文本: **ABCDEABCDE**

and energy. After charging, the program stops, indicating the status: "STA:END".



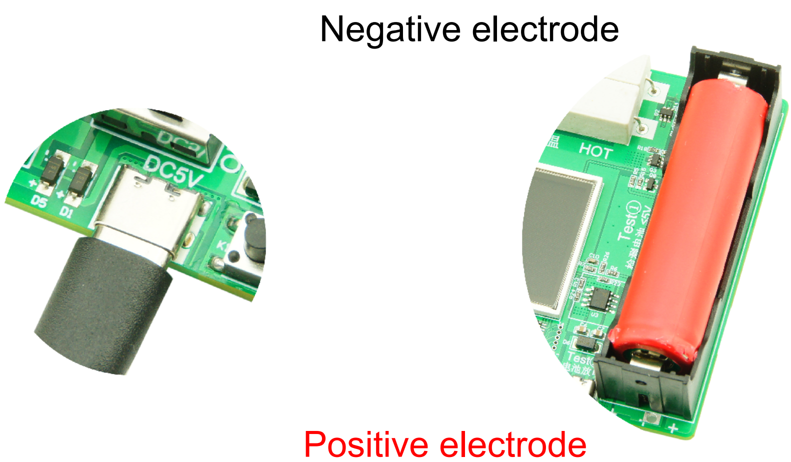
The battery has a dynamic voltage drop under load. The voltage drop is the actual voltage that triggers the stop

*Measured charging time reference: When the fully charged battery is discharged to 3V, it stops, and the discharge is 1592mAh. The duration: 1: 53:10



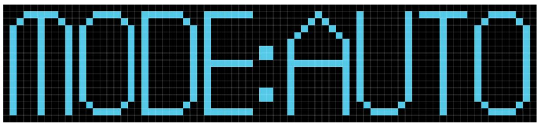
6. Battery capacity division and running cycle: "AUTO" mode operation program

6.1. Connected to DC5V power supply

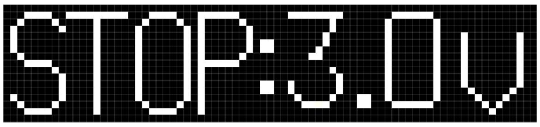


6.2. Adjustment mode: AUTO, fill the battery to the right holder

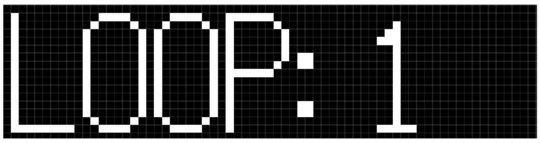
测试文本: ABCDEABC
测试文本: **ABCDEABCDE**



6.3 Setting the stop discharge voltage



6.4 Setting loop times



6.5 Click "开始/停止" to run the program: the program starts, indicating the status: CHG represents the current running charging program, the charging process records the time, and capacity and energy are not measured; Automatically switch to discharge after charging, indicating status: DSG represents the current running discharge program, and the discharge process records time, capacity and energy; Switch to charging after discharging, indicating status: CHG, when the number of LOOP=1, the program ends after charging, indicating status: END. When the number of LOOP is greater than 1, the battery will enter the discharge mode again after charging. After entering the discharge mode, the time will be accumulated and the capacity and energy will be re measured. The charging and discharging cycle will be completed until the cycle is completed. The program is completed, the battery is fully charged, and the indication status is END.

测试文本: ABCDEABC
测试文本: **ABCDEABCDE**



*Measured charging time reference:
Discharged battery, automatic mode cycle test once: test capacity 2608mAh, time consumption: 9:59 : 26

*When the LOOP is ＞ 1, the capacity metering only records the discharge capacity of the last time, and the non average capacity

*The capacity, energy and time data will be reset automatically when the machine is shut down and the mode is switched